

UNIVERSITY OF BAHRAIN
COLLEGE OF INFORMATION TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE

ITCS 311 – Systems Analysis and Design

Midterm
Semester I, 2010/2011

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| Student Id: | Name | |
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SEC#:

Date: Thursday, Dec 2nd, 2010

Time Allowed: 90 Minutes

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| Question 1 | 8 | |
| Question 2 | 20 | |
| Question 3 | 25 | |
| Question 4 | 12 | |
| Question 5 | 15 | |
| TOTAL | 80 | |

Notes:

1. Make sure you have 9 pages including the cover Page.
2. Make sure you write your **ID#**, **name**, and **section#**.
3. Use the back of the pages for any rough work, BUT remember rough work will not be marked.
4. Do not give more than one answer (alternative solutions) to the same question; if you do so then only the first answer will be marked.
5. Write your answers clearly in the space provided.
6. Remember that anyone found **CHEATING** would automatically **FAIL THE COURSE**.
7. It is yours responsibility to hand over the answer sheet to the invigilation staff.

Q#1: [8 marks]**1. Answer the following questions by selecting the correct answer**

| | |
|--|--|
| 1. Transaction processing systems: A. take relatively raw data that have been previously captured and convert them into a meaningful aggregated form that managers need to conduct their responsibilities B. attempt to codify and manipulate knowledge rather than information C. are designed to help organizational decision makers make decisions D. automate the handling of data about business activities | 2. Management information systems: A. are designed to help organizational decision makers make decisions B. automate the handling of data about business activities C. attempt to codify and manipulate knowledge rather than information D. take relatively raw data that have been previously captured and convert them into a meaningful aggregated form that managers need to conduct their responsibilities |
| 3. Decision support systems: A. take relatively raw data that have been previously captured and convert them into a meaningful aggregated form that managers need to conduct their responsibilities B. automate the handling of data about business activities C. attempt to codify and manipulate knowledge rather than information D. are designed to help organizational decision makers make decisions | 4. Which of the following is an IS characteristic for a transaction processing system? A. often involves semi-structured problems and the need to access data at different levels of detail B. provides expert advice by asking users a sequence of questions dependent on prior answers C. draws on diverse yet predictable data resources to aggregate and summarize data D. has a high-volume, data capture focus |

2. When choosing off-the-shelf software, the eight most common criteria are

_____ , _____ , _____ ,

_____. [4 marks]

Q#2: [5+10+5 marks]**1. Answer the following questions by selecting the correct answer? [5 marks]**

| | |
|---|---|
| 1. What would be the estimated time for completion if the time estimates for report design are as follows: optimistic = 3 weeks; pessimistic = 9 weeks; realistic = 6 weeks? a. 3 weeks b. 6 weeks c. 18 weeks d. 5 weeks | 2. An individual with a diverse set of skills - management, leadership, technical, conflict management, and customer relationship - who is responsible for initiating, planning, executing, and closing down a project best defines: a. systems analyst b. consultant c. project scheduler d. project manager |
| 3. A graphical representation of a project that shows each task as a horizontal bar whose length is proportional to its time for completion defines: a. network diagram b. data diagram c. project chart d. Gantt chart | 4. Managing conflict within a project team to assure that conflict is not too high or too low best defines which of the following project manager activities: a. conflict management b. leadership c. team management d. problem solving |

| | |
|--|--|
| 5. An individual with a diverse set of skills - management, leadership, technical, conflict management, and customer relationship - who is responsible for initiating, planning, executing, and closing down a project best defines: | |
| <ul style="list-style-type: none"> a. project scheduler b. project manager c. systems analyst d. consultant | |

2. Construct a network diagram using the following data. For each activity, identify its early start time, late start time, early finish time, late finish time, and slack. Identify the critical path. [10 marks]

| Activity | Optimistic Time | Pessimistic Time | Realistic Time | Expected Time | Preceding Task |
|----------|-----------------|------------------|----------------|---------------|----------------|
| A | 4 | 8 | 6 | | -- |
| B | 7 | 11 | 9 | | A |
| C | 3 | 7 | 5 | | A |
| D | 9 | 13 | 11 | | A |
| E | 6 | 10 | 8 | | B |
| F | 3 | 9 | 6 | | C, D, E |

3. Identify the four (4) phases involved in managing a project . [2 marks]

4. Identify the common activities and skills of a project manager . [3 marks]

Q#3.1: Answer the following questions by selecting the correct answer?[10 marks]

| | |
|--|--|
| 1. In the Gane and Sarson model, a rectangle that is missing its right vertical sides on a data flow diagram represents a. data store b. data flow c. process d. source/sink | 2. A data flow diagram that represents a system's major processes, data flows, and data stores at a high level of detail refers to: a. context diagram b. level-1 diagram c. level-0 diagram d. level-00 diagram |
| 3. A black hole is one that: a. has only inputs b. has only outputs c. has not been exploded to show enough detail d. has insufficient inputs to produce the associated processes | 4. A miracle process is one that: a. has only inputs b. has only outputs c. cannot be exploded further d. has insufficient inputs to produce the associated processes |
| 5. Recording a customer's payment is represented on a data flow diagram as a: a. process b. source c. data flow d. data store | 6. Calculating an employee's salary is represented on a data flow diagram as a: a. data flow b. source c. data store d. process |
| 7. Data in motion, moving from one place in a system to another, defines: a. data store b. process c. source d. data flow | 8. Graphically representing the functions, or processes, which capture, manipulate, store, and distribute data between a system and its environment and between components within a system refers to: a. data modeling b. flow charting c. process modeling d. transition modeling |
| 9. The diagram that shows the scope of the system, indicating what elements are inside and which are outside the system, is called a: a. context diagram b. level-2 diagram c. referencing diagram d. representative diagram | 10. Managing conflict within a project team to assure that conflict is not too high or too low best defines which of the following project manager activities: a. conflict management b. leadership c. team management d. problem solving |

Q#3.2:[15 marks] Read the following scenario carefully and draw the context diagram and level 0.[15 marks]

The Green Land Hotel decided to create hotel reservation system that will provide service to on-line customers, travel agents, and an administrator. On-line customers and travel agents can make searches, reservations and cancel an existing reservation on the hotel reservation's web site. Administrator can add/update the hotel and the room information approve/disapprove a new travel agent's account application and generate a monthly occupancy rate report for each hotel.

Draw the DFD at the context level.[5 marks]

Draw the major processes (level 0)[10 marks]

Context Diagram

Level 0

Q#4: Read the following scenario and draw the decision table

The University of Bahrain decides to build two basket ball teams (female and male teams). To join these teams there are a number of conditions:

Age(< 25, <30), Height(>150, >175) and Gender.

Student can make a request to join the female team if student is female, the age < 25 and the height is >150 cm. Also student can join the male team if the student is male, age < 30 and height is >180. Other than that student request is rejected.

175

Draw a decision table for the above scenario.[12 marks]

Q#5: Answer the following questions by selecting the correct answer?[15 marks]

| | |
|---|---|
| 1. Which of the following documents are useful in understanding possible future system requirements? a. documents that describe the current information system b. reports generated by current systems c. written work procedures d. all of the above | 2. Traditional methods of collecting systems requirements include: a. observing workers b. group interviews c. individual interviews d. all of the above |
| 3. Drawbacks to prototyping include: a. prototypes becoming very idiosyncratic to the initial user and difficult to diffuse or adapt to other potential users b. a tendency to avoid creating formal documentation of systems requirements that can then make the system more difficult to develop into a fully working system c. prototypes being built as stand-alone systems d. all of the above | 4. Good interview guidelines consist of: a. seeking a variety of perspectives from the interviews b. phrasing the question to illicit the correct response c. establishing expectation levels about the new system d. typing your notes within two weeks of the interview |
| 5. The analysis of documents can help you identify: a. special information processing circumstances that occur irregularly and may not be identified by any other requirements b. the reason why current systems are designed the way they are c. all of the above | 6. A system that integrates individual traditional business functions into a series of modules so that a single transaction occurs seamlessly within a single information system rather than several separate systems best describes: a. application service b. storage area network c. enterprise resource planning d. packaged software |

7. Write five [5] functional (services) requirements of the Housing system that you are analyse and design. Using the following format:

1. The system must allow the applicant to create an application for renting an apartment.

2.

3.

4.

5.

6.

8. List all traditional methods for determining requirements.